

IN THE CLAIMS:

1. (Canceled)

2. (Currently Amended) A scanning system for an object[7]

comprising:

a light source for emitting illuminating light along an illuminating light path,

an aperture array positioned between the light source and the object,

imaging optics positioned between the aperture array and the object for focusing the illuminating light onto ~~an~~the ~~object to be scanned,~~ and

means positioned between the aperture array and the object for changing a length of an optical path between the aperture array and the object,

an image detector for detecting backscattered light from a point on the object that passes back through said imaging optics along an observed beam path, ~~wherein the~~said image detector ~~comprises~~comprising two sensor elements for detecting backscattered light from the object point, and ~~including~~

~~imaging optics in the illuminating light path between the aperture array and the object for changing a length of an optical path therebetween, and~~

means for adjusting an accumulation of charges in the two sensor elements from intensity of light in the observed beam path during an exposure period (T) so that a correlation with the length of the optical path of an image plane from the imaging optics is created to enable reconstruction of an altitude coordinate (zs) of the object from a distribution of levels of intensity acquired from the two sensor elements during the exposure period (T), said means altering sensitivity of said two sensor elements and/or translucence in the observed beam path between said imaging optics and said image detector.

3. (Canceled)

4. (Previously Presented) The scanning system as defined in Claim 2, wherein said aperture array enables a plurality of object points to be detected, and said image detector includes as many groups of sensor elements as there are object points to be detected.

5. (Previously Presented) The scanning system as defined in claim 4, including deflecting means in said observed beam path between said object and said image detector for deflecting said observed beam path.

6. (Previously Presented) The scanning system as defined in Claim 5, wherein said deflecting means is a beam splitter.

7. (Previously Presented) The scanning system as defined in Claim 5, wherein said deflecting means is positioned between said imaging optics and said light source.

8. (Previously Presented) The scanning system as defined in Claim 5, wherein said deflecting means is positioned between said aperture array and said light source.

9. (Previously Presented) The scanning system as defined in Claim 2, including a moveable aperture which at least partially shades said sensor elements depending on amount of movement of said aperture.

10. (Previously Presented) The scanning system as defined in Claim 9, wherein movement of said aperture causes a reduction of shading of the at least one sensor element and an increase in shading of said at least one other sensor element.

11. (Previously Presented) The scanning system as defined in Claim 9, wherein said aperture shades, in an initial position, a part of said sensor elements completely and, in an end position, another part of said sensor elements completely and, in an intermediate position, shades both a part of certain sensor elements and a part of the other certain sensor elements.

12. (Previously Presented) The scanning system as defined in claim 11, wherein a degree of shading of said part of said sensor element is complementary to a degree of non-shading of the other part of said sensor element.

13. (Previously Presented) The scanning system as defined in claim 2, wherein said means consists of an electronically controlled optical element of variable translucence.

14. (Previously Presented) The scanning system as defined in claim 13, wherein said aperture array is designed for two-dimensional scanning of said object.

15. (Previously Presented) The scanning system as defined in Claim 14, including regulating means for adjusting a position of said aperture array such that regions not imaged in a first scan due to pulse duty ratio of said aperture array are imaged in a second scan.

16-21. (Canceled)

22. (Previously Presented) The scanning system as defined in claim 3, wherein an average scanning distance of said aperture array is in accord with a desired measuring accuracy.

23-25. (Canceled)